



Hill Air Force Base, Utah

Final

**Phase I Environmental Baseline Survey:
Building 260,
Hill Air Force Base, Utah**

December 28, 2009

**Final Phase I Environmental Baseline Survey (EBS)
Building 260,
Hill Air Force Base, Utah**

Contract FA8201-08-D-0006, Order E017

**Department of the Air Force
Air Force Materiel Command
Hill Air Force Base, Utah 84056
December 28, 2009**

Prepared in accordance with Department of the Air Force Instruction 32-7066, *Environmental Baseline Surveys in Real Estate Transactions*, Dated April 25, 1994, which implements Air Force Policy Directive 32-70, *Environmental Quality*

EXECUTIVE SUMMARY

Purpose and Location of the Phase I Environmental Baseline Survey

Hill Air Force Base (AFB) proposes to complete a lease in the southern central portion of the base, on which a private entity would construct and operate a power co-generation facility. The subject property is currently occupied by Building 260 (a boiler plant), paved storage areas, and paved driveways. Building 260 currently houses eight boilers, jointly capable of producing 460,000 pounds per hour of steam. Hill AFB purchases 330 million pounds of steam per year from an off-base source. Establishing the proposed on-base cogeneration facility would reduce or eliminate the need to purchase steam from off-base sources.

This Phase I Environmental Baseline Survey (EBS) is intended to:

- document known or suspected environmental contamination of the subject property (soil, water, structures, and/or equipment);
- identify potential environmental contamination liabilities;
- establish environmental due diligence;
- develop information with which to assess health and safety risks to the extent that sampling activities were part of the project scope; and
- contribute to a process that is protective of human health and the environment.

Survey Methodology

The Phase I EBS investigation was conducted in accordance with Department of the Air Force Instruction (AFI) 32-7066, *Environmental Baseline Surveys in Real Estate Transactions*, Dated April 25, 1994, which implements Air Force Policy Directive 32-70, *Environmental Quality*. Procedures documented in the AFI Chapter 2 (*Conducting Phase I of the EBS*) were followed during records searches, literature reviews, interviews, site visits, and formulation of conclusions.

Past and present ownership and land use of the subject property was determined by reviewing the *Ownership Map of Ogden Arsenal and Vicinity*, revised 1936 (Ogden 1936). Hill AFB personnel were contacted regarding current use and history of the subject property. Two local history books were reviewed. Hill AFB historical maps were located and reviewed. Historical topographic maps were reviewed. Aerial photographs from a variety of time periods were reviewed. Hill AFB installation restoration program (IRP) and storage tank program records were reviewed. State of Utah records for leaking underground storage tanks were reviewed.

Forty federal and state databases were accessed by a private database specialty vendor to search for any history of hazardous waste storage, use, treatment, or disposal, and similar records for landfills and other regulated substances such as petroleum compounds and polychlorinated biphenyls. The database search met the requirements of the *Standard*

Practice for Environmental Site Assessments, E 1527-05, published by the American Society for Testing and Materials.

The site and adjoining properties were visually inspected on November 10, 2009.

Sampling of environmental media was not incorporated into the scope of the project. If investigators had suspected that such environmental sampling was warranted, their course of action would have been to notify Hill AFB environmental managers for the effort to be handled by others or under a separate task assignment.

Findings

Prior to government ownership, the land that later became Hill AFB was used for raising turkeys and dry farmed wheat. The boiler plant (Building 260) was completed on the subject property in December of 1941.

During the site visit, no conditions were observed that would indicate presence of environmental contamination for the subject property. Petroleum products and other chemicals consistent with the operation of a boiler plant were observed to be properly stored on the subject property. Database searches did not reveal any findings regarding the presence of hazardous materials or petroleum products for the subject property.

Hill AFB documents (not part of the database searches) reported that surface spills and tank overfill events contaminated soils at the subject property with diesel fuel. Bioventing was implemented as the remedial technology, significantly reducing the level of soil contamination. No further remedial actions were planned. Results of a groundwater monitoring event conducted in 2001 indicated trichloroethene was present beneath the subject property at a concentration of between 0.5 and 1.0 parts per million, creating the potential for vapor intrusion into existing and future structures on the subject property. Asbestos and lead based paint are present on the subject property. No other findings were noted in the EBS.

Conclusions and Recommendations

A contamination summary map published in 2006 contained warnings for the subject property that (a) the potential to encounter contamination does exist, and (b) no construction or other activity that would disturb soil or interfere with remedial action equipment or facilities can occur without concurrence of Hill AFB environmental managers and attorneys. Asbestos and lead based paint are present (neither presents a concern as long as it remains undisturbed).

Future actions may be necessary if excavations disturb contaminated soils, if asbestos is disturbed or removed, or if lead based paint is disturbed or removed.

No soil or groundwater samples were collected. Knowledge of subsurface conditions was gained through discussions with Hill AFB IRP personnel.

Based upon the results of the EBS, no other recommendations were prepared relative to the proposed lease at this time.

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1.0 PURPOSE OF THE ENVIRONMENTAL BASELINE SURVEY

Hill Air Force Base (AFB) proposes to complete a lease in the southern central portion of the base, on which a private entity would construct and operate a power co-generation facility. The subject property is currently occupied by Building 260 (a boiler plant), paved storage areas, and paved driveways. Building 260 currently houses eight boilers, jointly capable of producing 460,000 pounds per hour of steam. Hill AFB purchases 330 million pounds of steam per year from an off-base source. Establishing the proposed on-base cogeneration facility would reduce or eliminate the need to purchase steam from off-base sources.

This Phase I Environmental Baseline Survey (EBS) is intended to:

- document known or suspected environmental contamination of the subject property (soil, water, structures, and/or equipment);
- identify potential environmental contamination liabilities;
- establish environmental due diligence;
- develop information with which to assess health and safety risks to the extent that sampling activities were part of the project scope; and
- contribute to a process that is protective of human health and the environment.

1.1 Boundaries of the Property and Survey Area

Hill AFB is located approximately twenty five miles north of downtown Salt Lake City and 7 miles south of downtown Ogden, Utah (Figure 1 of Appendix B). Hill AFB is surrounded by several communities: Roy and Riverdale to the north; South Weber to the northeast; Layton to the south; and Clearfield, Clinton, and Sunset to the west. The base lies primarily in northern Davis County with a small portion located in southern Weber County.

The subject property for the proposed lease would be located in the southern portion of the base (see Figure 2 and Figure 3, Appendix B), just north of South Gate Drive. Hill AFB land use in the vicinity of the subject property consists of industrial facilities supporting aircraft maintenance activities.

The site lies within Davis County, Utah, and is a portion of a larger parcel of land (80 acres) that was purchased by the United States' (US) government in the late 1930s from James W. Fackerell (Appendix B). The 80 acre parcel is the southern ½ of the northeast ¼ of Section 5, Township 4 North, Range 1 West, Great Salt Lake Base and Meridian.

2.0 SURVEY METHODOLOGY

2.1 Approach and Rationale

The Phase I EBS investigation was conducted in accordance with Department of the Air Force Instruction (AFI) 32-7066, *Environmental Baseline Surveys in Real Estate Transactions*, Dated April 25, 1994, which implements Air Force Policy Directive 32-70, *Environmental Quality*. Procedures documented in the AFI Chapter 2 (*Conducting Phase I of the EBS*) were followed during records searches, literature reviews, interviews, site visits, and formulation of conclusions.

Reasonably obtainable documents were reviewed, a visual site inspection was completed, and interviews were conducted with individuals familiar with the current use and past history of the site.

2.1.1 Description of Documents Reviewed

Past and present ownership and land use of the subject property was determined by reviewing the *Ownership Map of Ogden Arsenal and Vicinity*, revised 1936 (Ogden 1936). A representative of the Hill AFB civil engineering squadron was contacted by telephone and by electronic mail.

Two local history books (Kaysville 1985, Leonard 1999) were reviewed at the Kaysville branch, Davis County libraries.

Hill AFB historical maps showing the area including the subject property were located and reviewed for the years 1940 through the 1980s. Portions of selected historical maps are included in Appendix B (Ogden 1943, Hill AFB 1959, Hill AFB 1967).

Historical topographic maps were located and reviewed for the years 1955, 1975, 1986, and 1992 (EDR 2009a - Appendix B).

Aerial photographs were located and reviewed for the years 1975, 1981, 1987, 1993, 1997, and 2006 (EDR 2009b - Appendix C).

Forty federal and state databases were accessed by a private database specialty vendor to search for any history of hazardous waste storage, use, treatment, or disposal, and similar records for landfills and other regulated substances such as petroleum compounds and polychlorinated biphenyls (PCBs) (EDR 2009c). The database search met the requirements of the *Standard Practice for Environmental Site Assessments*, E 1527-05, published by the American Society for Testing and Materials.

Hill AFB Installation Restoration Program (IRP) records were reviewed (Appendix D).

Hill AFB records for storage tanks were reviewed, as well as those from the State of Utah, Department of Environmental Quality, Division of Environmental Response and Remediation (DERR 2009) (Appendix D).

2.1.2 Property Inspections

The objective of the site inspection is to identify any visual or olfactory evidence of environmental conditions in connection with the subject property or adjoining properties to the extent not obstructed by bodies of water, adjacent buildings, snow, or other obstacles.

The site and adjoining properties were visually inspected on November 10, 2009. A map of the subject property is included as Figure 3 of Appendix B. Selected site photographs are included in Appendix C of this report.

2.1.3 Personal Interviews

Contact information for persons interviewed during data collection efforts is provided in Appendix E of this document. Typed notes from the interviews and/or e-mails documenting discussions are included in Appendix D.

The following Hill AFB personnel were contacted regarding site history for the subject property:

- Loni Johnson, Real Estate, Land Use;
- Brad Robb, Transportation Group, Land Use;
- William Whitney, Boiler Operations Supervisor;
- Jarrold Case, P.E., Remedial Project Manager;
- Shannon Smith, P.E, Remedial Project Manager;
- Sam Johnson, Storage Tank Program;
- Mike Berglund, Pipelines, Hydrant Fueling, and Transfer Systems;
- Helen Kenyon-Bares, Natural Gas Pipelines;
- Bob Garland, Oil/Water Separators;
- Stephanie Winiecki, Pesticides;
- Mike Petersen, Wastewater;
- William Kopfman, Drinking Water;
- Rodney Sanders, Asbestos, PCBs, Lead Based Paint;
- Cary Fisher, Radon;
- Amy Butler, Historian; and
- David R. Kendziora, Historian.

2.1.4 Sampling

Sampling of environmental media was not incorporated into the scope of the project. If investigators had suspected that such environmental sampling was warranted, their course of action would have been to notify Hill AFB environmental managers for the effort to be handled by others or under a separate task assignment.

3.0 FINDINGS FOR THE SUBJECT PROPERTY

3.1 History and Current Use

According to the *Ownership Map of Ogden Arsenal and Vicinity*, revised 1936 (Ogden 1936), the subject property lies within a larger parcel of land (80 acres) that was purchased by the US government in the late 1930s from James W. Fackerell (Appendix B).

According to the book *Layton Utah, Historic Viewpoints* (Kaysville 1985), the land that later became Hill AFB was committed to agricultural uses (raising turkeys and dry farmed wheat) prior to being purchased by the federal government for use by the US Army Air Corps (approximately 1938). The *History of Davis County* (Leonard 1999) similarly reports construction of Hill Field began in 1938 on a hilltop section of Davis County being used until that time as dry farmed land.

The Ogden Ordnance Depot historical map from 1943 (Appendix B) shows the subject property to be vacant. Subsequent Hill AFB maps show Building 260 to be present in its existing location in 1959 (Appendix B). An historical topographic map dated 1955 (Appendix B) shows no structures present where Building 260 currently exists. Hill AFB real estate office records indicate Building 260 was completed in December of 1941.

Most of the aerial photographs reviewed were of such poor quality that a determination could not be made regarding condition of the subject property. The best aerial photograph that could be located was dated 2006 (Appendix C). It shows Building 260 in its current configuration.

Hill AFB land use within and surrounding the subject property consists of industrial facilities and storage areas supporting Hill AFB aircraft maintenance activities. No conditions were observed that would indicate presence of environmental contamination near the subject property.

3.2 Environmental Setting

The subject property and surrounding properties are occupied by structures and pavements. Little if any vegetation exists.

3.3 Hazardous Substances

3.3.1 Hazardous Materials and Petroleum Products

During the site visit with Mr. William Whitney, the following items were observed in and around Building 260:

- water softener salt, and a brine tank holding a water-salt mixture;
- flammable and combustible materials lockers (paint, lubricants, cleaning products);
- laboratory chemicals for water analyses;
- an emergency generator with fuel, oil, coolant, batteries; and
- a storage shed on south side of the building containing 55-gallon plastic drums of flocculant, phosphate, caustic soda, and cyclohexylamine anticorrosive.

Mr. Brad Robb explained the contents of the storage areas include: vehicles, both functional and surplus; aircraft parts; and other surplus items. The storage areas are paved. Any drips or leaks from the vehicles would be identified, stopped, and the liquids would be removed. No other hazardous materials or waste would be expected to be present.

The database searches by Environmental Data Resources (EDR) did not reveal any findings regarding the presence of hazardous materials or petroleum products for the subject property.

See Section 3.5 for information on storage tanks.

3.3.2 Hazardous and Petroleum Waste

During the site visit with Mr. William Whitney, the following items were identified:

- three cans are present for holding used rags, which are collected and laundered on Hill AFB;
- approximately two gallons per year of used oil is generated and is sent for recycling; and
- when preventive maintenance and repairs are performed on equipment, including the emergency generator, all waste is removed from the building by the maintenance crews for recycling, treatment, or disposal.

The database searches by EDR did not reveal any findings regarding the presence of hazardous waste or petroleum waste for the subject property.

3.4 Installation Restoration Program Contamination

3.4.1 Soil

A 1996 report (Hess 1996) discussed remediation of diesel fuel contaminated soils at the subject property. The sources of the releases were stated to be surface spills and tank overflow events. Bioventing was implemented as the remedial technology, significantly reducing the level of soil contamination. No further remedial actions were planned.

A contamination summary map published in 2006 (SES 2006) contained warnings for the subject property that (a) the potential to encounter contamination does exist, and (b) no construction or other activity that would disturb soil or interfere with remedial action equipment or facilities can occur without concurrence of Hill AFB environmental managers and attorneys.

3.4.2 Groundwater

Groundwater contamination has been identified beneath the subject property (Hess 1996, CH2M 2002, SES 2006). Results of a groundwater monitoring event conducted in 2001 (CH2M 2002) indicated trichloroethene was present beneath the subject property at a concentration of between 0.5 and 1.0 parts per million. This groundwater contamination creates the potential for vapor intrusion into existing and future structures on the subject property. A contamination summary map published in 2006 (SES 2006) contained a warning for the subject property that no construction or other activity that would disturb groundwater or interfere with remedial action equipment or facilities can occur without concurrence of Hill AFB environmental managers and attorneys.

Since depth to groundwater is greater than 100 feet below ground surface (bgs) (CH2M 2002), future activities on the subject property would not be expected to contact contaminated groundwater.

3.5 Storage Tanks

3.5.1 Above Ground Storage Tanks

One above ground storage tank (AST) with a capacity of 500 gallons of diesel fuel was observed during the site visit. This AST is positioned over a concrete secondary containment structure.

3.5.2 Underground Storage Tanks

The Hill AFB underground storage tank (UST) program lists six USTs for the subject property, all containing diesel fuel, with a combined capacity of 194,000 gallons. Two additional diesel fuel USTs (18,000 gallons and 1,000 gallons) were removed in 1990 and prior to 1988, respectively (Hess 1996).

None of these eight USTs is known to have leaked. The leaking UST database maintained by DERR does not provide specific locations for releases on Hill AFB (DERR 2009). However, the only three “open” (not remediated) UST releases on Hill AFB were discussed with Ms. Robin Jenkins of DERR on November 9, 2009. None of these three releases is located on or adjacent to the subject property.

3.5.3 Pipelines, Hydrant Fueling, and Transfer Systems

A buried natural gas pipeline supplies fuel to the boilers in Building 260. Buried diesel fuel lines connect the six USTs and the single AST to Building 260.

The Hill AFB *Liquid Fuels System* map (Hill AFB 2000) did not indicate presence of any other pipelines, hydrant fueling, or transfer systems on or adjacent to the subject property.

3.6 Oil/Water Separators

Mr. Bob Garland did not indicate any current or former presence of oil/water separators on or adjacent to the subject property.

3.7 Pesticides

Ms. Stephanie Winiecki reported the subject property receives occasional spraying for wasps and spiders, and cracks in the pavement receive spot treatments for weeds.

3.8 Medical or Biohazardous Waste

Based on historical use of the subject property, no current or former presence of medical or biohazardous waste was suspected.

3.9 Ordnance

Based on historical use of the subject property, no current or former presence of ordnance was suspected.

3.10 Radioactive Wastes

Based on historical use of the subject property, no current or former presence of radioactive materials or waste was suspected.

3.11 Solid Waste

One dumpster used for collecting uncontaminated trash is located on the subject property, immediately west of Building 260.

3.12 Groundwater

See the groundwater discussion in Section 3.4.2.

3.13 Wastewater Treatment, Collection, and Discharge

Mr. Mike Petersen reported Building 260 is connected to both sanitary sewer (lines lead off-base to North Davis Sewer District) and the Hill AFB industrial wastewater treatment plant.

Storm drains exist around the perimeter of Building 260.

3.14 Drinking Water Quality

Mr. William Kopfman reported drinking water supply lines are connected to Building 260. The water supplied by this system is tested and meets drinking water quality standards.

3.15 Asbestos

Mr. Rodney Sanders reported above-ground asbestos exists as insulation on a 24-inch diameter steam line, possibly on and around boilers, and a detailed survey could identify other occurrences. Below-ground asbestos exists as transite pipe and rickwell casing.

3.16 Polychlorinated Biphenyls

Mr. Rodney Sanders reported a base contractor has removed PCBs from this area of the base. Presence of PCBs is not suspected.

3.17 Radon

Ms. Cary Fisher reported a radon assessment performed in Hill AFB homes in the late 1980s indicated there were no problems with radon in Hill AFB homes. No other radon studies have been performed on Hill AFB. Housing was assumed to be the worst case (based on hours per year occupancy) and no radon concerns were identified.

3.18 Lead-Based Paint

Mr. Rodney Sanders reported lead-based paint is present in Building 260.

4.0 FINDINGS FOR ADJACENT PROPERTIES

The EDR database searches were conducted to identify occurrences of storage and releases of hazardous materials, hazardous waste, and other regulated substances for nearby properties.

Hill AFB was identified by EDR as being present on multiple federal databases dealing with generation, storage, treatment, disposal, corrective action, and/or priority cleanup of hazardous waste, but specific locations on the base were not mapped by EDR. Hill AFB environmental managers and documents were consulted to obtain specific details regarding locations and types of hazardous materials, hazardous waste, or other regulated substances either on or in close proximity to the subject property. These details are presented in Sections 3.1 - 3.18 of this document.

Many of the same concerns exist for adjacent properties as for the subject property, those being the potential for contaminated soils, and known presence of contaminated groundwater at depths exceeding 100 feet bgs.

4.1 Land Uses

On-base nearby land use surrounding the subject property consists of industrial facilities.

4.2 Surveyed Properties

The adjacent properties were visually inspected on November 10, 2009. No conditions were observed that would indicate presence of environmental contamination near the subject property.

5.0 APPLICABLE REGULATORY COMPLIANCE ISSUES

5.1 List of Compliance Issues

Future actions may be necessary if excavations disturb contaminated soils, if asbestos is disturbed or removed, or if lead based paint is disturbed or removed.

5.2 Description of Corrective Actions

No needed corrective actions were identified for the subject property.

5.3 Estimates of Various Alternatives

This section is not applicable to the current document.

6.0 CONCLUSIONS, DATA GAPS

A contamination summary map published in 2006 (SES 2006) contained warnings for the subject property that (a) the potential to encounter contamination does exist, and (b) no construction or other activity that would disturb soil or interfere with remedial action equipment or facilities can occur without concurrence of Hill AFB environmental managers and attorneys. Asbestos and lead based paint are present (neither presents a concern as long as it remains undisturbed).

Future actions may be necessary if excavations disturb contaminated soils, if asbestos is disturbed or removed, or if lead based paint is disturbed or removed.

6.1 Facility Matrix

Building	Facility	Identified Conditions	Property Category Code
Not applicable	All of the subject property	Soils, groundwater, asbestos, lead based paint	3*

* Category 3 properties are areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require removal or remedial response).

6.2 Property Categories Map (If More Than One Category)

All of the subject property is designated Category 3. Therefore, no property categories map was prepared.

6.3 Resources Map

Resource inventories are not required by AFI 32-7066, and were outside the scope of this investigation. No resource map was prepared.

6.4 Data Gaps

No data gaps were identified for the subject property.

7.0 RECOMMENDATIONS

Future actions may be necessary if excavations disturb contaminated soils, if asbestos is disturbed or removed, or if lead based paint is disturbed or removed.

Based upon the results of the EBS, no other recommendations were prepared relative to the proposed lease at this time.

8.0 CERTIFICATIONS

Certification of the Environmental Baseline Survey

Streamline Consulting, LLC has conducted this environmental baseline survey on behalf of the Air Force. Streamline Consulting, LLC has reviewed all appropriate records made available, and conducted visual site inspections of the selected facilities following an analysis of information during the record search. The information contained within the survey report is based on records made available and, to the best of Streamline Consulting, LLC's knowledge, is correct and current as of the date shown below.

Certified by: Randal B. KE. Date: 12/28/09
Project Manager

Approved by: Harry Briesmaster Date: 26 Feb 10
HARRY BRIESMASTER III, YF-03, DAF
Director, 75th Civil Engineer Group

Certification of PCB Clearance

The subject property is in compliance with 40 CFR 761 as outlined below:

Based on information provided by the Hill AFB SABER program manager (Mr. Rodney Sanders, who formerly tracked the presence of asbestos, lead-based paint, and PCBs on Hill AFB), there is no known PCB contaminated soil, wastes, or unserviceable equipment remaining on the existing property.

Certified by: Randal B. KE. Date: 12/28/09
Project Manager

Approved by: Harry Briesmaster Date: 26 Feb 10
HARRY BRIESMASTER III, YF-03, DAF
Director, 75th Civil Engineer Group

Certification Related To Contamination

The subject property contains known hazardous substances as that term is defined in the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601), as amended, or other contamination as specified by the Resource Conservation and Recovery Act of 1976, the implementing Environmental Protection Agency regulations (40 CFR Parts 261, 262, 263, and 761), and the Federal Property Management Regulations (41 CFR Part 101-47).

Related to known or potential contamination, a complete search of agency files has revealed that hazardous substances as that term is defined in the Comprehensive Environmental Response, Compensation and Liability Act (42 U.S.C. 9601) as amended, were stored for one year or more, known to have been released, or were disposed on the subject property.

Naphthalene: Chemical Abstract Service (CAS) number = 91-20-3
RCRA hazardous waste code = U165
Quantity = unknown
Date of release = prior to 1996
Remedial action = bioventing

Trichloroethene: CAS number = 79-01-6
RCRA hazardous waste code = U228
Quantity = unknown
Date of release = prior to 1996
Remedial action = none

Asbestos: CAS number = 1332-21-4
RCRA hazardous waste code = none
Quantity = unknown
Date of release = affixed to structure
Remedial action = none

Lead: CAS number = 7439-92-1
RCRA hazardous waste code = D008
Quantity = unknown
Date of release = affixed to structure
Remedial action = none

The Air Force has taken all remedial action currently necessary to protect human health and the environment with respect to any hazardous substances released, disposed, or stored on the subject property.

A contamination summary map published in 2006 contained warnings for the subject property that (a) the potential to encounter contamination does exist, and (b) no construction or other activity that would disturb soil or interfere with remedial action equipment or facilities can occur without concurrence of Hill AFB environmental

managers and attorneys. Asbestos and lead based paint are present (neither presents a concern as long as it remains undisturbed).

Future actions may be necessary if excavations disturb contaminated soils, if asbestos is disturbed or removed, or if lead based paint is disturbed or removed.

Certified by: Randal B. K.
Project Manager

Date: 12/28/09

Approved by: Harry Briesmaster
HARRY BRIESMASTER III, YF-03, DAF
Director, 75th Civil Engineer Group

Date: 26 Feb 10

APPENDIX A LIST OF ACRONYMS

AFB	Air Force Base
AFI	Air Force Instruction
AST	Above Ground Storage Tank
bgs	Below Ground Surface
CAS	Chemical Abstract Service
CFR	Code of Federal Regulations
DERR	Division of Environmental Response and Remediation (state of Utah)
EBS	Environmental Baseline Survey
EDR	Environmental Data Resources
IRP	Installation Restoration Program
PCB	Polychlorinated Biphenyl
US	United States
UST	Underground Storage Tank

APPENDIX B
FIGURES AND MAPS

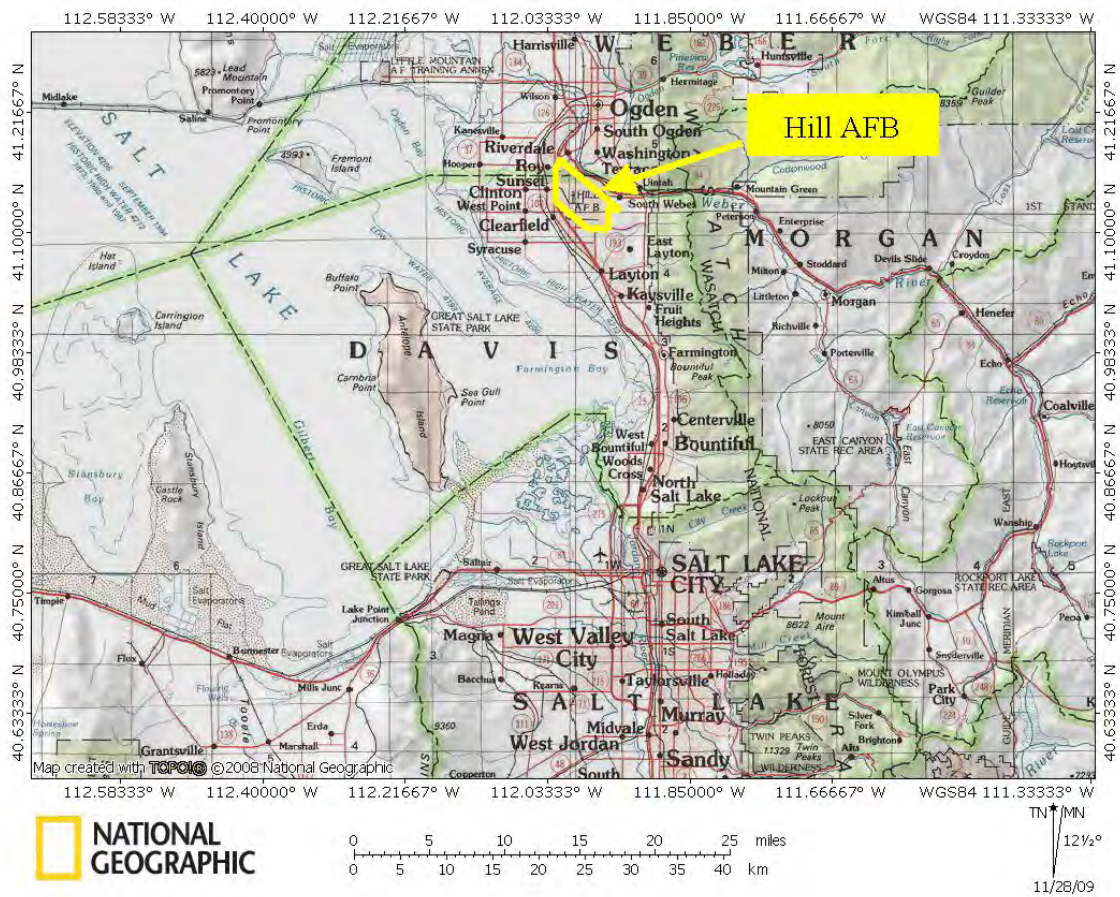


Figure 1: Hill AFB Location Map

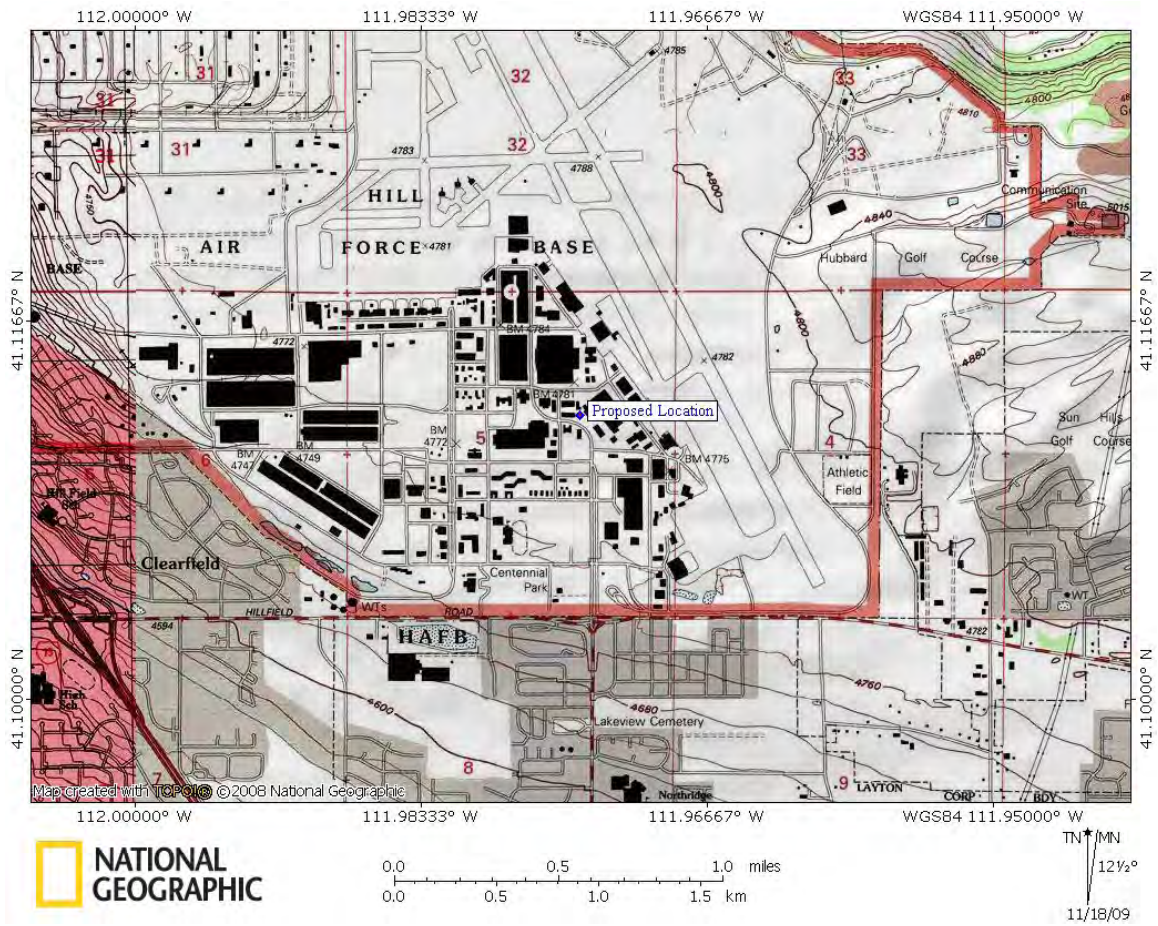


Figure 2: Location of the Subject Property for the Proposed Lease

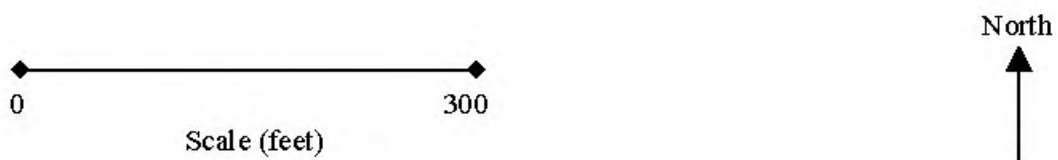
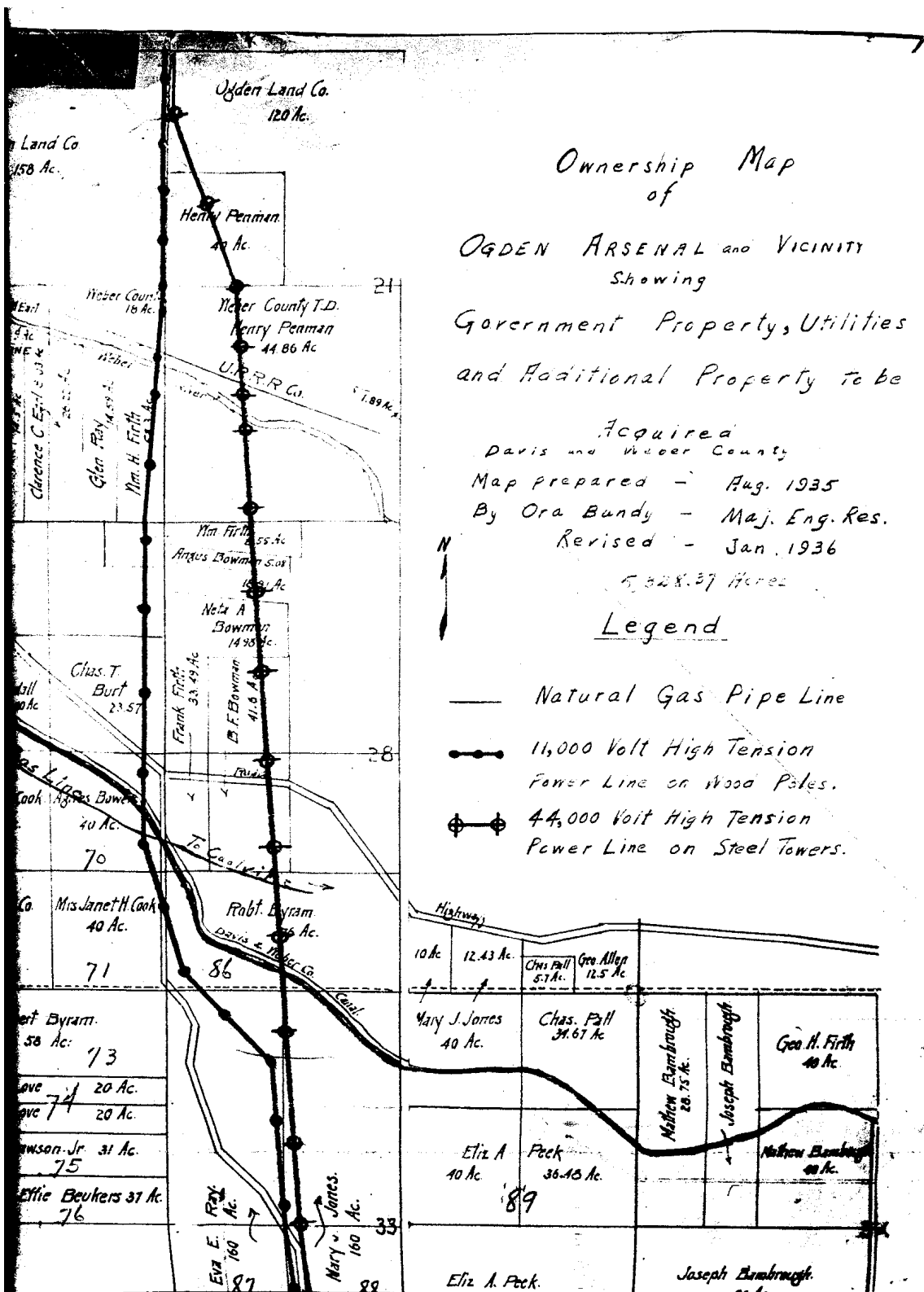
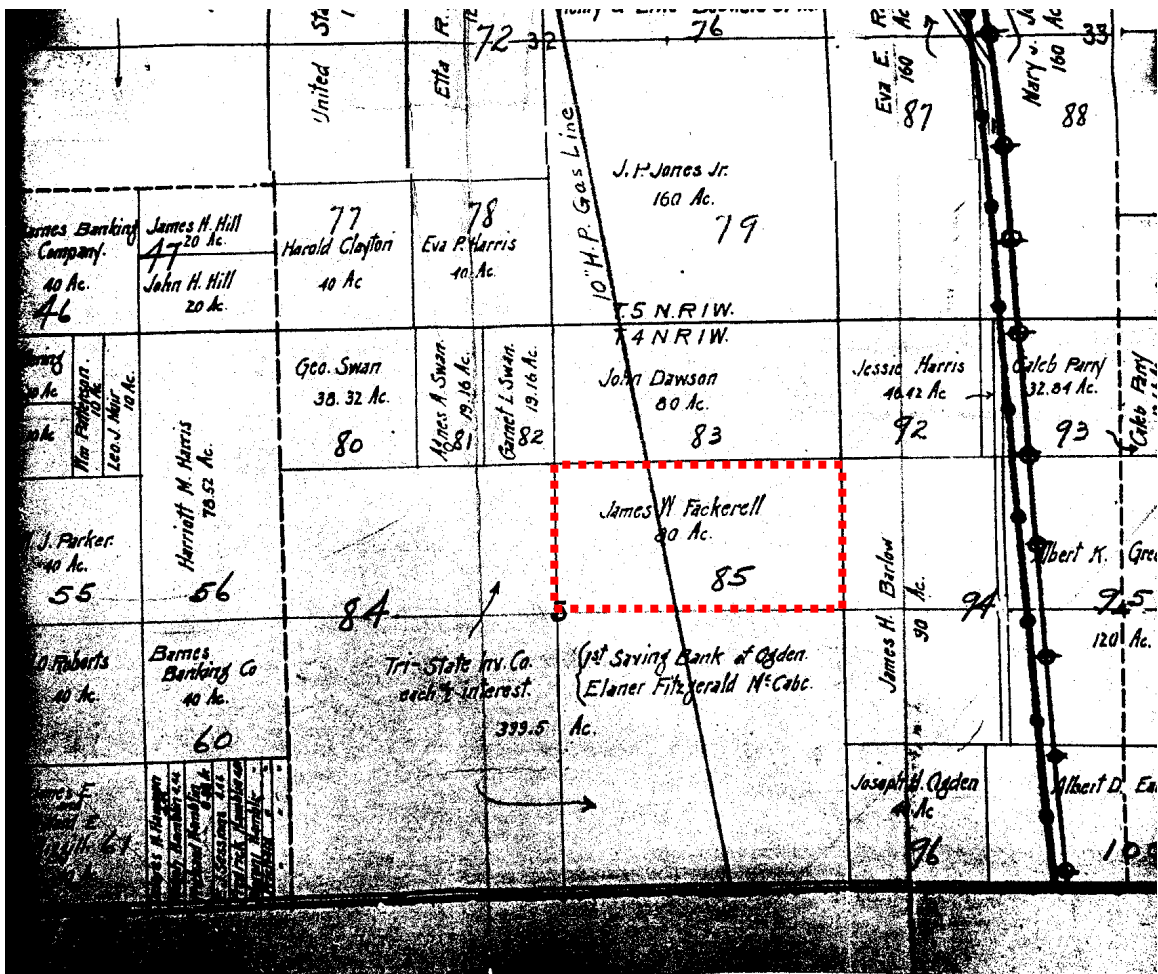
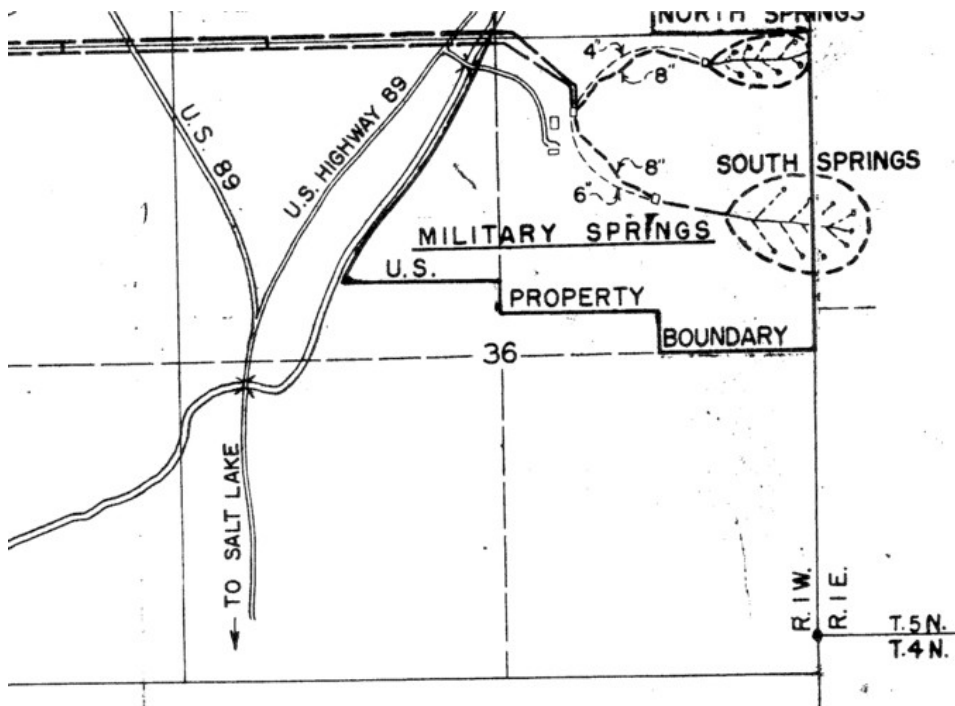


Figure 3: Perimeter of the Subject Property

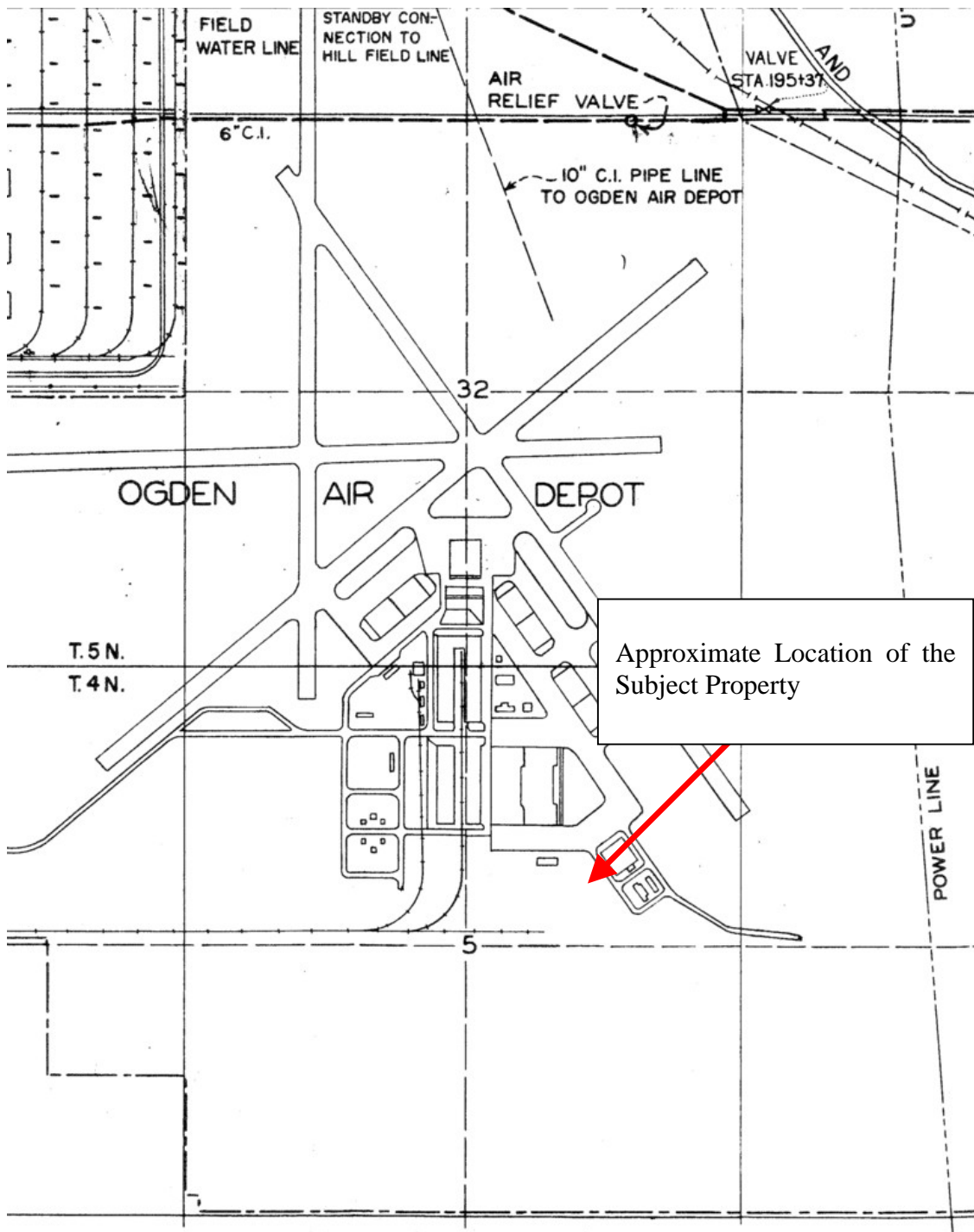


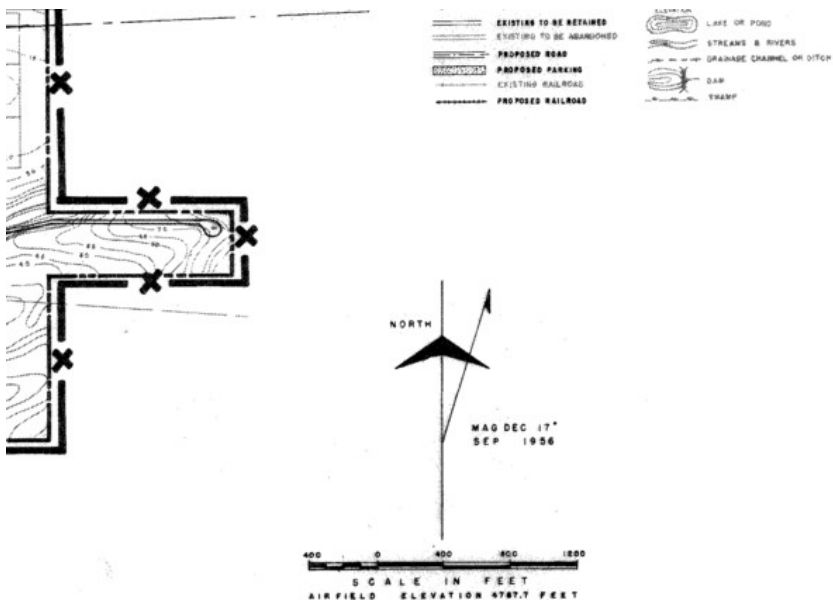


Dashed line indicates the southern $\frac{1}{2}$ of the northeast $\frac{1}{4}$ of Section 5, Township 4 North, Range 1 West, Great Salt Lake Base and Meridian.



REVISIONS		WATER WORKS SYSTEM OGDEN ORDNANCE DEPOT		
2-8-43		D'FTSMAN	TRACER	ENGINEER <i>JCA</i>
		CHECKER	CHECKER <i>R. 12/4/42</i>	DATE 5-6-41
DRG. PERTAINS TO		SUBMITTED		
		CAPT. ORD. DEPT. U.S.A.		
		EXAMINED: <i>E. V. Little</i> CAPT. ORD. DEPT. U.S.A.		
		APPROVED: <i>J. Worthen Proctor</i> LT. COL. ORD. DEPT. U.S.A.		
SCALE: 1"=1,000'		OGDEN ORDNANCE DEPOT		
1.1-E-3				





TY LEGEND

FENCING
GATE
SENTRY HOUSE
CONTROL & IDENTIFICATION
GUARD TOWER

1 STRANDS BARBED WIRE ABOVE
5 STRANDS BARBED WIRE ABOVE
5 STRANDS BARBED WIRE ABOVE
5 STRANDS BARBED WIRE ABOVE
NCE (HOG WIRE)(5'WHEN NOTED)
BARBED WIRE, STEEL POSTS

SECURITY FACILITIES.
F FACILITY
AREA USE TAB F-1.

DEPARTMENT OF THE AIR FORCE
ASST CHIEF OF STAFF / INSTALLATIONS — WASHINGTON, D. C.

OGDEN AIR MATERIEL AREA

MASTER PLAN
SECURITY

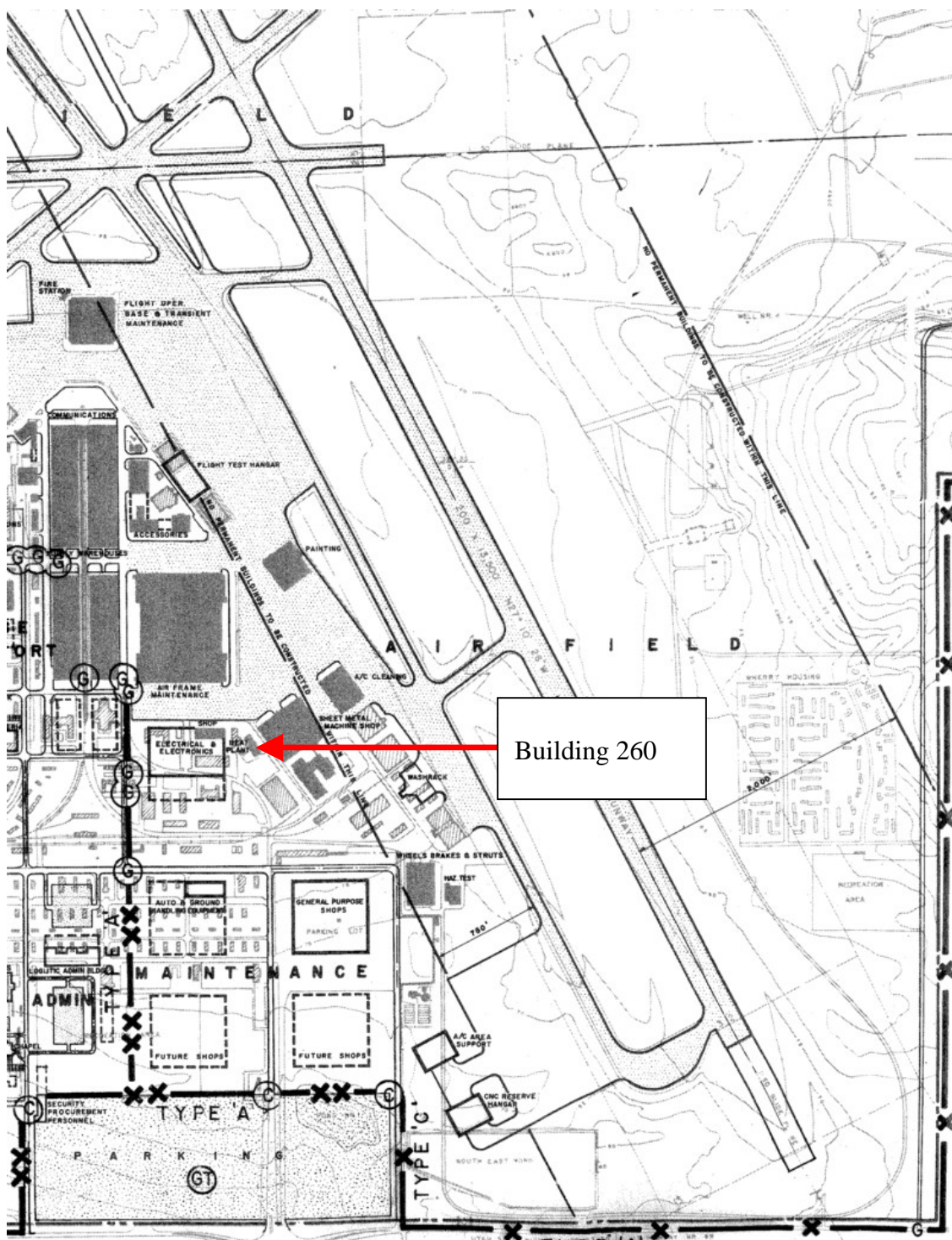
HILL AIR FORCE BASE
HILL AIR FORCE BASE, UTAH

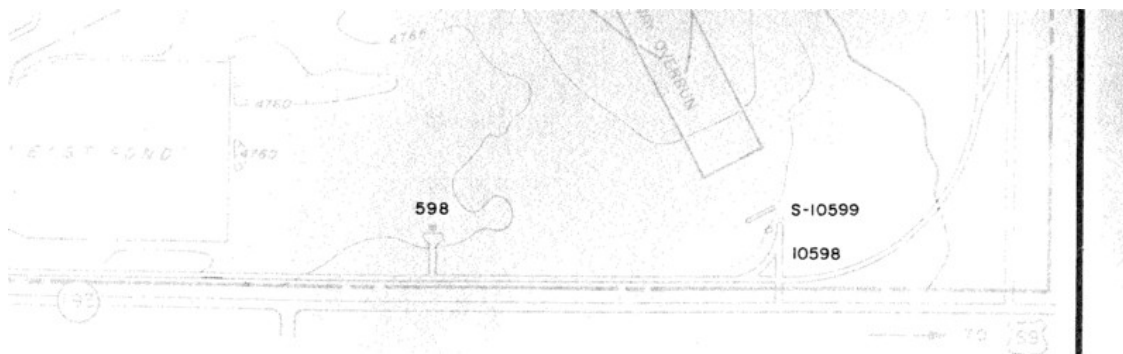
SCALE 1 INCH = 800 FT DATE 23 JAN 1959

MASTER PLANNING DIRECTIVE: 57-6

LEO A. DALY CO. ARCHITECTS & ENGINEERS
SAN FRANCISCO OMAHA SEATTLE ST. LOUIS

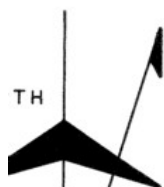
TAB
NR
H
SHEET





SOURCE OF INFORMATION

MAP COMPILED FROM GOVERNMENT SOURCE MATERIAL WHICH USED PHOTOGRAMMETRIC METHOD, WITH GRID BASED ON UTAH COORDINATE SYSTEM, AND UNIVERSAL TRANSVERSE MERCATOR GRID. HORIZONTAL AND VERTICAL CONTROL BY U.S.G.S., U.S.C. & G.S. AND U.S.C.E. WITH MINOR CORRECTIONS BY U.S. GEOLOGICAL SURVEY. (TRANSVERSE MERCATOR PROJECTION.)



MAG DEC 16° 30' 00"E.
JAN 1967

400 800 1200

IN FEET
VATION 4787.7 FEET

REV	DATE	DESCRIPTION	INITIAL
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PLAN REVISIONS

DEPARTMENT OF THE AIR FORCE
ASST. CHIEF OF STAFF / INSTALLATIONS - WASHINGTON D.C.

OGDEN AIR MATERIEL AREA
MASTER PLAN
BASIC LAYOUT PLAN

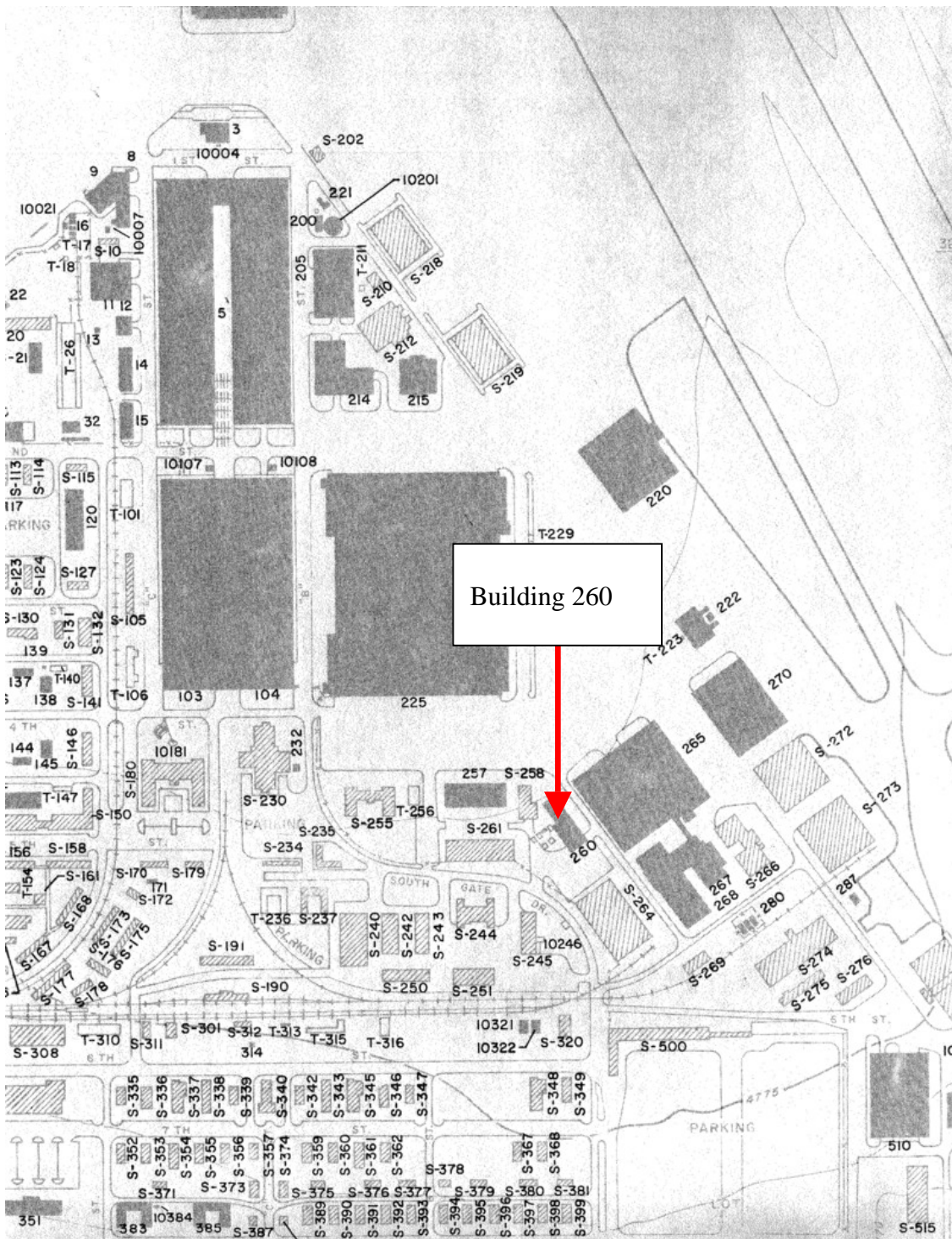
HILL AIR FORCE BASE
HILL AIR FORCE BASE, UTAH

SCALE: 1 INCH = 400 FT. DATE: JANUARY, 1967

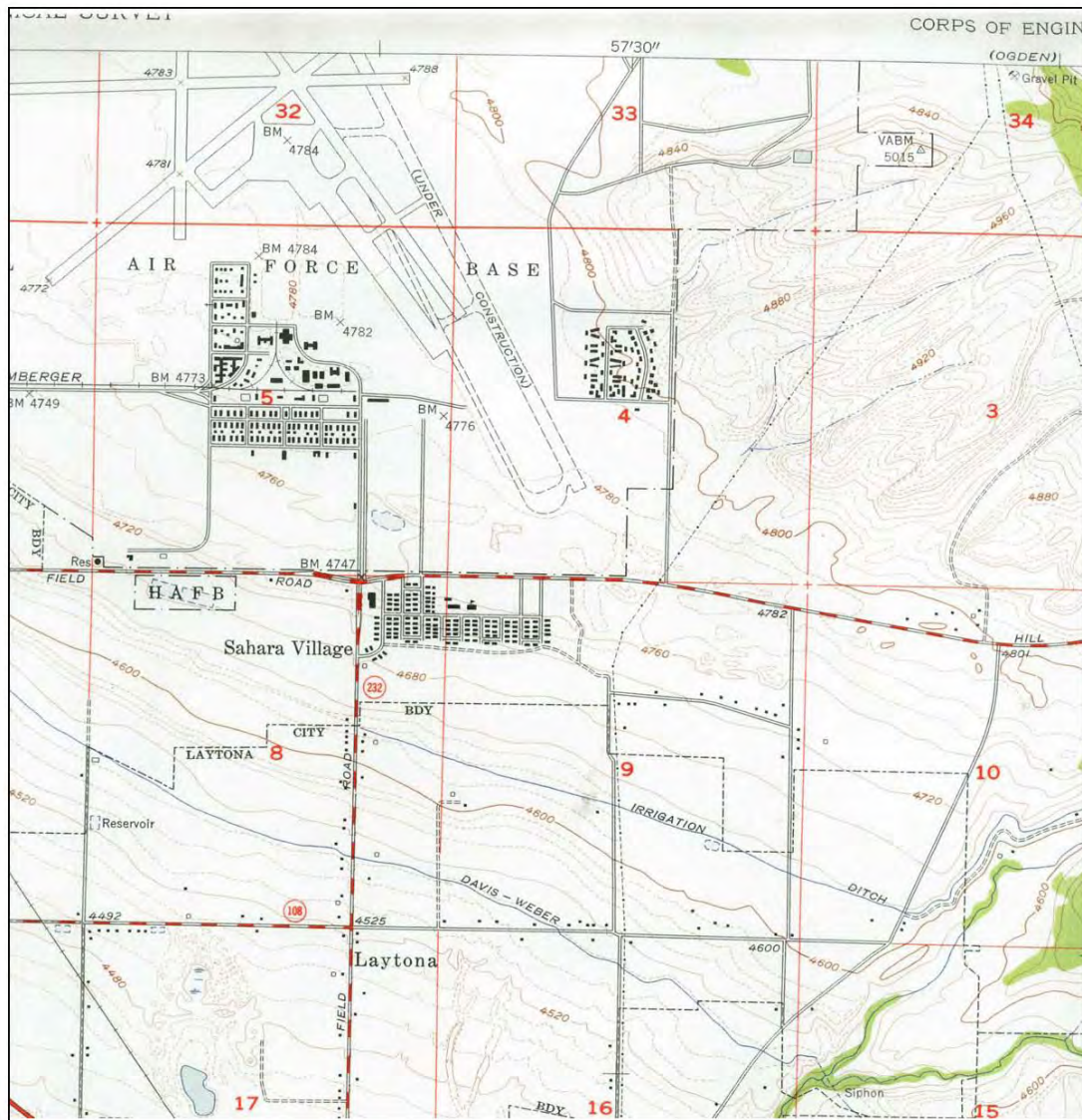
TAB
NR


C-1

E. TORKELSON CO.



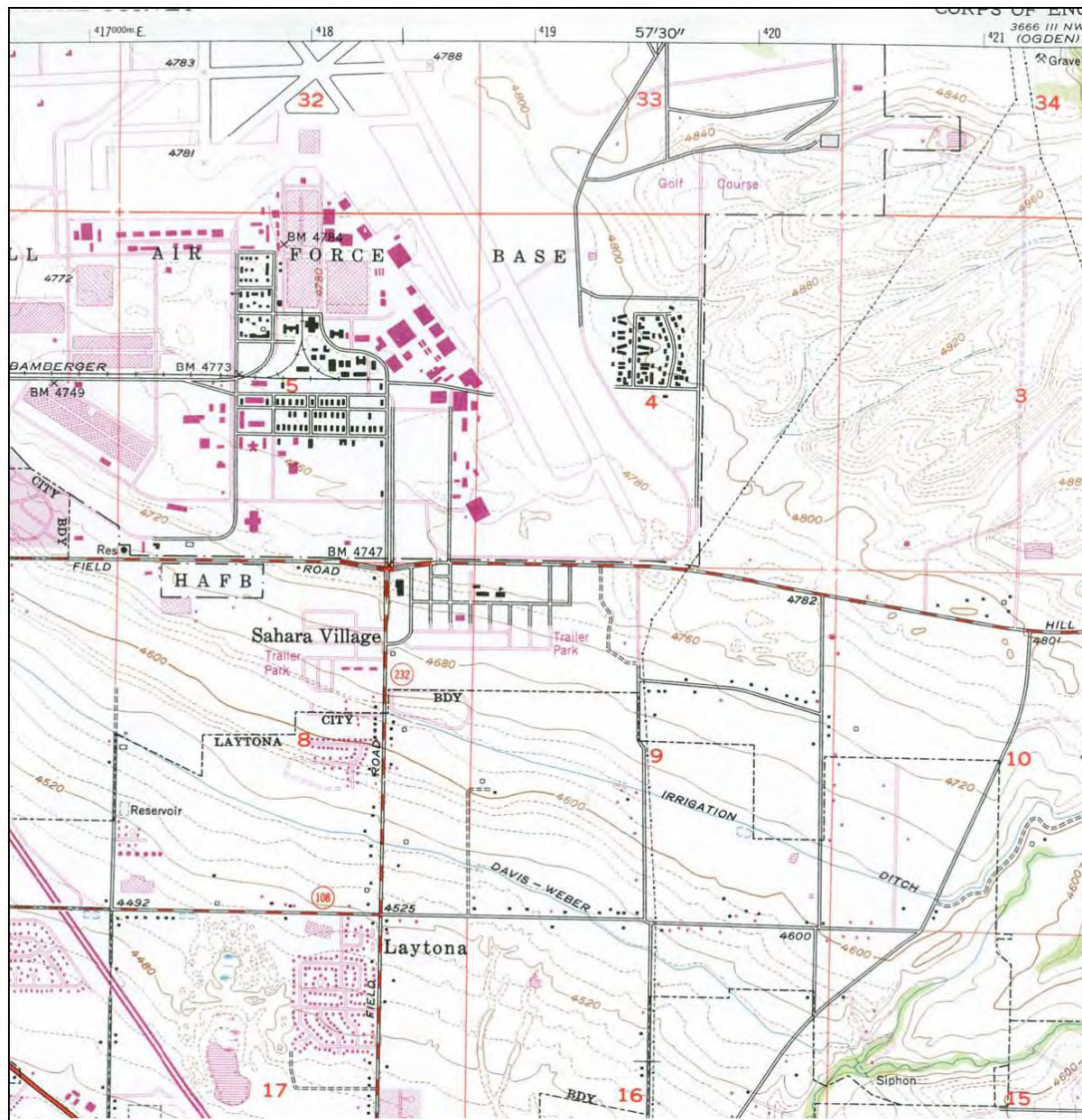
Historical Topographic Map



	TARGET QUAD	SITE NAME:	Hill AFB	CLIENT:	Streamline Consulting, LLC
	NAME: Kaysville, UT	ADDRESS:	Bldg. 260 Cogeneration Facility	CONTACT:	Randal B. Klein
	MAP YEAR: 1955		Hill AFB, UT 84056	INQUIRY#:	2622981.4
	SERIES: 7.5	LAT/LONG:	41.1125 / 111.974	RESEARCH DATE:	10/26/2009
	SCALE: 1:24,000				

Note: Two representative historical topographic maps have been included, one showing the subject property as vacant, one showing the existence of Building 260.

Historical Topographic Map



<p>N ↑</p>	<p>TARGET QUAD NAME: Kaysville, UT MAP YEAR: 1975 PHOTOREVISED FROM: 1955 SERIES: 7.5 SCALE: 1:24,000</p>	<p>SITE NAME: Hill AFB ADDRESS: Bldg. 260 Cogeneration Facility Hill AFB, UT 84056 LAT/LONG: 41.1125 / 111.974</p>	<p>CLIENT: Streamline Consulting, LLC CONTACT: Randal B. Klein INQUIRY#: 2622981.4 RESEARCH DATE: 10/26/2009</p>
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APPENDIX C
AERIAL AND SITE PHOTOS

Most of the aerial photographs reviewed were of such poor quality that a determination could not be made regarding condition of the subject property.

The best aerial photograph that could be located (2006) is shown on the following page.



INQUIRY #: 2622981.5

YEAR: 2006

| = 604'



Photographs Taken November 10, 2009



Outdoor storage, empty drums



500 gallon diesel storage tank



Fenced storage area



Combustible and flammable storage lockers



Used rags



Emergency generator

APPENDIX D INTERVIEWS AND ADDITIONAL RESEARCH
(see Appendix E for addresses and phone numbers)

Site Visit with William Whitney**November 10, 2009**

Hazardous Materials: storage shed on south side of the building. 55-gallon plastic drums
floculant, phosphate, caustic soda, cyclohexylamine anticorrosive

water softener salt, and a brine tank holding a water-salt mixture

flammable and combustible materials lockers (paint, cleaning products)

laboratory chemicals for water analyses

One Cummins emergency generator with fuel, oil, coolant, batteries

Hazardous Waste: below ground vaults, hold and are pumped, up to 500 gallons of
condensate

3 cans for collecting used rags, which are collected and laundered on base

Approximately two gallons of used oil per year, which is sent for
recycling.

When preventive maintenance and repairs are performed on the
emergency generator, all waste is removed from the building by the
maintenance crews for recycling, treatment, or disposal.

Solid Waste: one dumpster for uncontaminated trash

Petroleum: One 500-gallon diesel tank for the emergency generator, within concrete
secondary containment

Wastewater is drained by sewer lines and floor drains, which are routed to the North
Davis Sewer District or to the Hill AFB IWTP.

Interview with Jarrod Case**November 10, 2009**

In the industrial area of Hill AFB, potential for contaminated soil exists.

We reviewed *South Area of Operable Unit 9 Site Inspection Final Comprehensive Data
Evaluation*, February 2001, CH2M HILL.

- An underground storage tank near the southwest corner of Building 260 was
remediated in 1994.
- Soil sampling was performed in 1994 near a jet fuel pipeline and a wastewater lateral.
Analyses included VOCs, SVOCs, and metals. No contamination above residential
risk-based screening levels was found.

- No information is available for soil beneath Building 260. Sampling beneath the building is being deferred as long as the structure exists.

Interview with Mike Berglund

November 18, 2009

Reviewed the *Liquid Fuels System* map, dated September 25, 2000.

Building 260: fuel tanks are present at this location; no other indication of pipelines, hydrant fueling, or transfer systems.

Electronic Mail, Loni Johnson

From: Johnson, Loni Civ USAF AFMC 75 CEG/CEAAR
[Loni.Johnson@HILL.af.mil]
Sent: Monday, November 09, 2009 8:25 AM
To: rbklein@streamlineut.com
Subject: RE: Follow Up, Our Conversation

Yes, it's fairly accurate. I know the scouts used the two structures for meetings etc for a period of time. As far as information on the restrooms and sewer lines etc., you could check with David Murray, an engineer here in CE. If he doesn't know, he may be able to point you in the right direction. His number is 777-2118.

Loni

-----Original Message-----

From: Randal B. Klein [mailto:rbklein@streamlineut.com]
Sent: Friday, November 06, 2009 9:31 AM
To: Johnson, Loni Civ USAF AFMC 75 CEG/CEAAR
Subject: Follow Up, Our Conversation

Loni,

Do these 2 notes accurately describe our phone call?

Follow-up phone call with Loni Johnson, 11/4/09

- 1) In the vicinity of Bldg 260, no indication that the surrounding paved areas (driveways, parking areas, storage areas) have had structures on them.
- 2) For the waste to energy facility area, it has been either vacant or used as a recreation area (playing fields). At one time there were restrooms and a few small storage sheds used for non-industrial purposes.

-----Original Message-----

From: Johnson, Loni Civ USAF AFMC 75 CEG/CEAAR
[mailto:Loni.Johnson@HILL.af.mil]
Sent: Monday, November 02, 2009 4:32 PM
To: rbklein@streamlineut.com
Subject: RE: 2 areas for EBSs - Historical Use Query

Randy,

Our records show that Bldg 260 was built as a heating facility and has always been used as such. That's all the information I have.

Loni

Electronic Mail, Bob Garland

From: Garland, Bob Civ USAF AFMC 75 CES/CLEA [Bob.Garland@HILL.af.mil]
Sent: Thursday, November 12, 2009 4:25 PM
To: rbklein@streamlineut.com
Subject: RE: Oil Water Separators, Bldg 260

Randy, I'm not aware of any oil water separators in the outlined area.
Thanks

Bob Garland
75 CEG ESOH Coordinator
801-777-4924

-----Original Message-----

From: Randal B. Klein [mailto:rbklein@streamlineut.com]
Sent: Thursday, November 12, 2009 3:38 PM
To: Garland, Bob Civ USAF AFMC 75 CES/CLEA
Subject: Oil Water Separators, Bldg 260

Bob,

Could you please view the attached PDF file and reply to confirm there are no oil water separators within the perimeter shown by the black line (Building 260 and storage areas to its west).

Thanks,

Randy Klein

Interview, Stephanie Winiecki

November 12, 2009

At Building 260, cracks in the pavement receive spot treatments for weeds.
Occasional spraying occurs for wasps and spiders.

Electronic Mail, Mike Petersen

From: Petersen, Mike R Civ USAF AFMC 75 CEG/CEVC
[Mike.Petersen@HILL.af.mil]
Sent: Monday, November 16, 2009 2:47 PM
To: rbklein@streamlineut.com
Subject: RE: Sewer Connections, Bldg 260

Looks accurate.

Mike

-----Original Message-----

From: Randal B. Klein [mailto:rbklein@streamlineut.com]
Sent: Monday, November 16, 2009 2:23 PM
To: Petersen, Mike R Civ USAF AFMC 75 CEG/CEVC
Subject: Sewer Connections, Bldg 260

Mike,

These are my telephone notes. Please reply to confirm they are correct,
or
send corrections if necessary.

Building 260 is connected to both sanitary sewer (lines lead off-base to
North Davis Sewer District) and the Hill AFB Industrial Wastewater
Treatment
Plant (IWTP).

Storm drains exist around the perimeter of Building 260.

Thanks,

Randy

Interview, William Kopfman

November 18, 2009

At Building 260, drinking water lines are present.
The Hill AFB water supply system is tested and meets drinking water quality standards.

Electronic Mail, Rodney Sanders

From: Sanders, Rodney B Civ USAF AFMC 75 CES/CEOS
[Rodney.Sanders@HILL.af.mil]
Sent: Tuesday, November 10, 2009 10:54 AM
To: rbklein@streamlineut.com
Subject: RE: Phone Call Notes
Signed By: rodney.sanders@hill.af.mil
Security Label: Signed - Invalid signature

Randy,

Made a couple of changes.

Rod

-----Original Message-----

From: Randal B. Klein [mailto:rbklein@streamlineut.com]
Sent: Tuesday, November 10, 2009 8:31 AM
To: Sanders, Rodney B Civ USAF AFMC 75 CES/CEOS
Subject: Phone Call Notes

Rodney,

This e-mail contains my notes from our telephone conversation. Please reply to let me know if I need to make any corrections.

Building 260:

Asbestos: Above-ground asbestos exists as insulation on a 24-inch diameter main steam line, possibly on and around boilers, and a detailed survey could identify other occurrences. Below-ground asbestos exists as transite pipe and rickwell casing.

PCBs: A base contractor removed PCBs from this area of the base. Presence of PCBs is not suspected.

Lead-based paint: Lead-based paint is present in Building 260.

Thanks,

Randy Klein

Interview and Electronic Mail, Cary Fisher

Telephone call update 11/12/09 with Cary Fisher: No other radon studies have been performed on Hill AFB. Housing was assumed to be the worst case (based on hours per year occupancy) and no radon concerns were identified.

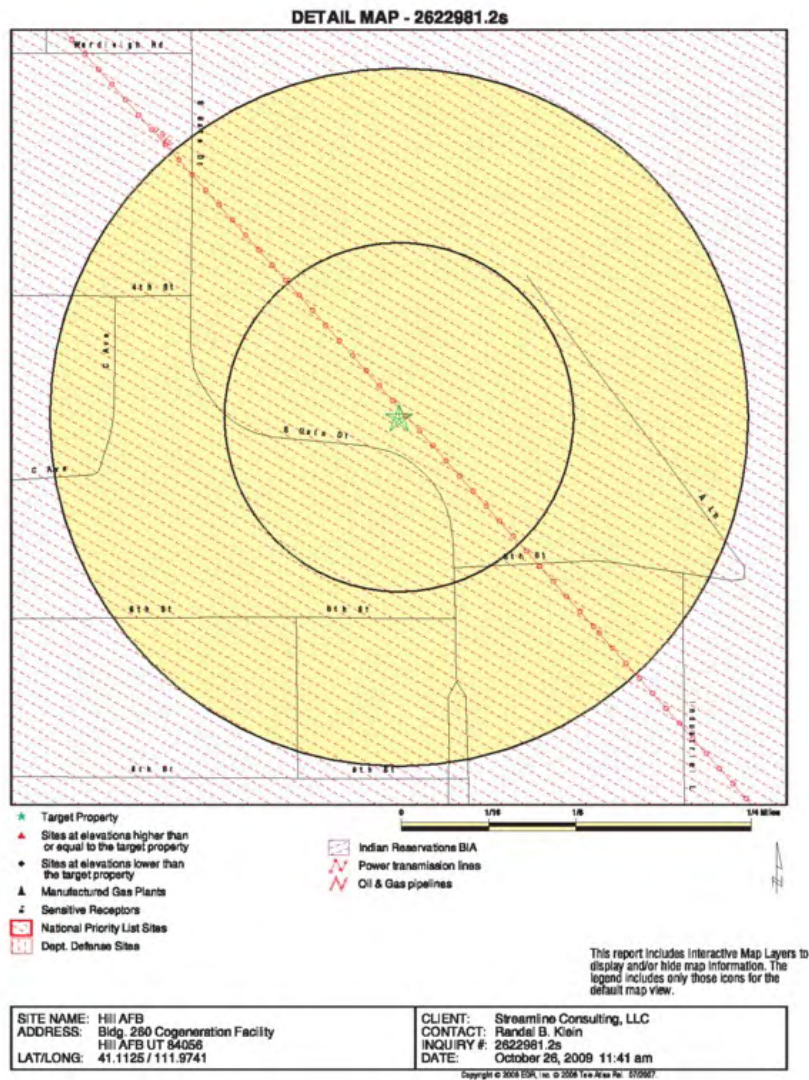
From: Fisher Cary Civ 75 MDG/SGPB [Cary.Fisher@HILL.af.mil]
Sent: Monday, November 18, 2002 12:12 PM
To: 'rbklein@streamlineut.com'
Subject: RE: EBS for Proposed Weber Basin Fluoridation Station

The radon assessment done in HAFB homes in the late 1980's indicated there were no problems with radon in HAFB homes.

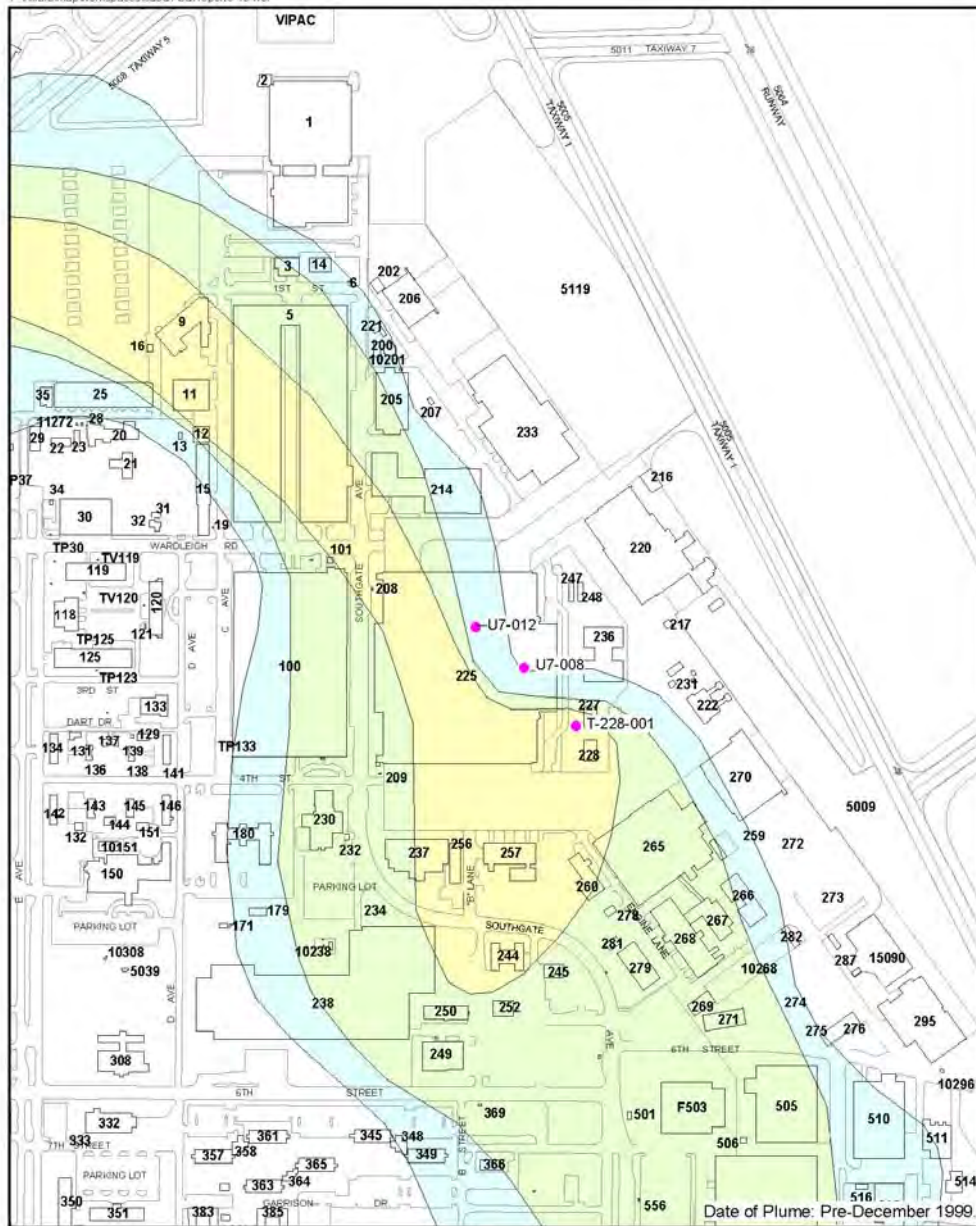
Interview, Brad Robb

November 19, 2009

Storage includes vehicles, both functional and surplus (motor oil, antifreeze)
area is paved, drips or leaks would be seen and cleaned
also stored: aircraft parts, surplus items
no haz liquids or haz waste no hazardous materials



The EDR report showed no results in the vicinity of the subject property.



LEGEND

- Monitoring Points Sampled / Spring 2001
- Other Monitoring Points
- TCE Concentration, 5 - 50 ppb
- TCE Concentration, 50 - 500 ppb
- TCE Concentration, 500 - 1,000 ppb

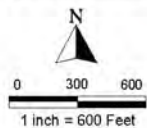


FIGURE 2-1
OPERABLE UNIT 7
MONITORING POINT LOCATION MAP
BASEWIDE GROUND WATER MONITORING
HILL AIR FORCE BASE, UTAH

Source: CH2M 2002







Contamination Summary Map Hill Air Force Base, Utah

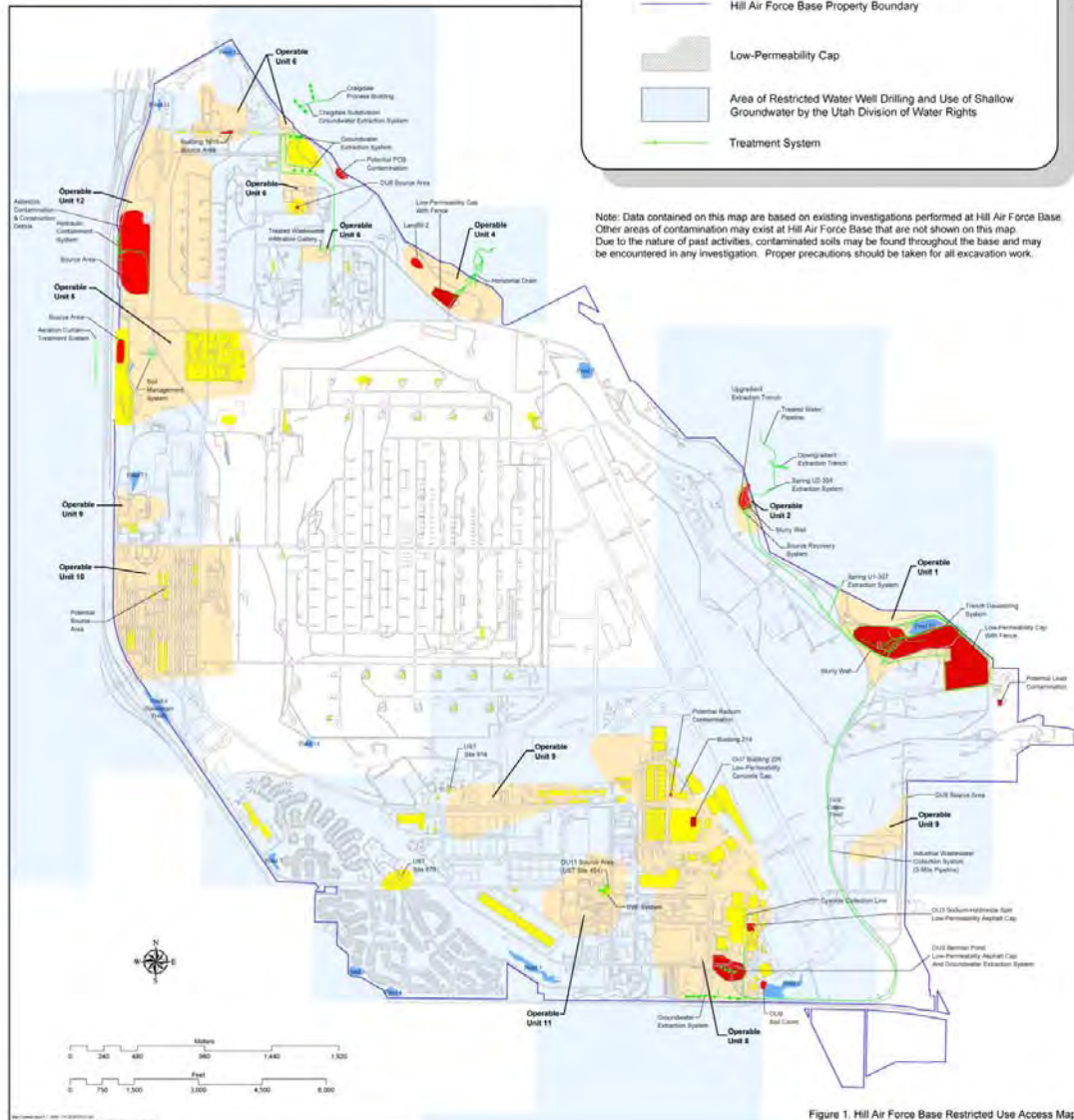
Air Force Instruction AFI 32-7020 18 February 2004

Operable Unit Area:

No construction or other activity that will disturb the soil or groundwater within these Operable Units or that will interfere with remedial action equipment or facilities, shall occur without the concurrence of 75 CEG/CEV and OO-ALC/JA. For authority, see AFI 32-7020/00-ALC HAFBS 1.

Explanation

-  **Restricted Area:** Area of significant soil contamination. Construction activities may be prohibited in this area. Please contact 75 CEG/CEVR at 777-6916.
-  **Potential to Encounter Contamination:** If construction activities are planned in this area please contact 75 CEG/CEVR at 777-6916 for further information during excavation activities.
-  Hill Air Force Base Property Boundary
-  Low-Permeability Cap
-  Area of Restricted Water Well Drilling and Use of Shallow Groundwater by the Utah Division of Water Rights
-  Treatment System



Source: SES 2006

Fiscal Year: 2009

Storage Tanks

Quarter: JAN-MAR

Tank Id	Type	Size	Contents	Compliant	Constructed
U00236 7	UST	2000	JP-8	TRUE	10/06/1997
AIRCRAFT FUEL PURGE					
U00260 2	UST	25000	DIESEL	TRUE	01/01/1958
U00260 3	UST	25000	DIESEL	TRUE	01/01/1958
U00260 4	UST	32000	DIESEL	TRUE	01/01/1963
U00260 5	UST	32000	DIESEL	TRUE	01/01/1963
U00260 6	UST	40000	DIESEL	TRUE	01/01/1958
U00260 7	UST	40000	DIESEL	TRUE	01/01/1958
U00420 1	UST	10000	UNLEADED GASOLINE	TRUE	07/19/1995
U00420 2	UST	10000	UNLEADED GASOLINE	TRUE	07/19/1995
U00420 3	UST	10000	UNLEADED GASOLINE	TRUE	07/19/1995

Source: Hill AFB UST Program

APPENDIX E REFERENCES

LIST OF DOCUMENTS REVIEWED

CH2M 2002: *Hill Air Force Base Long-Term Groundwater Monitoring Project, Analytical Data Validation Report for the Spring 2001 Operable Unit 7, Groundwater Monitoring Point Sampling Round*, CH2M HILL, March, 2002.

DERR 2009: *Leaking Underground Storage Tank List*, Utah Division of Environmental Response and Remediation, current as of November, 2009.

EDR 2009a: The EDR Historical Topographic Map Report: *Building 260 Cogeneration Facility, Hill Air Force Base, UT, 84056*, Environmental Data Resources, Inc., October 26, 2009.

EDR 2009b: The EDR Historical Aerial Photograph Report: *Building 260 Cogeneration Facility, Hill Air Force Base, UT, 84056*, Environmental Data Resources, Inc., October 26, 2009.

EDR 2009c: The EDR Radius Map with GeoCheck: *Building 260 Cogeneration Facility, Hill Air Force Base, UT, 84056*, Environmental Data Resources, Inc., October 26, 2009.

Hess 1996: *Final Decision Document, Site ST74, Building 260 UST Fuel Releases*, Hess, Terry, August, 1996.

Hill AFB 1959: *Ogden Air Materiel Area Master Plan – Security*, Hill AFB, January, 1959.

Hill AFB 1967: *Ogden Air Materiel Area Master Plan – Basic Layout Plan*, Hill AFB, January, 1967.

Hill AFB 2000: *Liquid Fuels System*, Hill AFB, September, 2000.

Kaysville 1985: *Layton Utah, Historic Viewpoints*, Kaysville-Layton Historical Society, 1985.

Leonard 1999: *History of Davis County*, Leonard, Glen, 1999.

Ogden 1936: *Ownership Map of Ogden Arsenal and Vicinity*, revised January, 1936.

Ogden 1943: *Water Works System, Ogden Ordnance Depot, Ogden Utah*, May, 1941 (Revised 2-8-43).

SES 2006: *Final Letter Report for the Operable Unit 9 Calendar Year 2006 Inventory of Deferred Sites*, Select Engineering Services, November, 2006.

LIST OF PERSONS AND AGENCIES CONSULTED

Hill AFB Enhanced Use Leasing Office, OO-ALC/XP-EUL

David Bruce Evans, Energy Team, (801) 586-2889

Hill AFB History Office, OO-ALC/HO

Amy Butler, Historian, (801) 777-4006

David Kendziora, Historian, (801) 777-4002

Hill AFB Environmental Division, 75 CEG/CEV

Jarrod Case, P.E., Remedial Project Manager, (801) 777-3943

Shannon Smith, P.E, Remedial Project Manager, (801) 775-6913

Sam Johnson, Storage Tank Program, (801) 775-3653

Mike Petersen, Wastewater Program, (801) 775-6904

Hill AFB Civil Engineering, 75 CEG and 75 CES

Loni Johnson, Realty Specialist, (801) 777-3550

William Whitney, Boiler Operations Supervisor, (801) 777-5581

Helen Kenyon-Bares, Chief, Geospatial Information & Services, (801) 777-2650

Mike Berglund, Liquid Fuels Maintenance Technician, (801) 777-9576

Bob Garland, Env. Safety Occupational Health Coordinator, (801) 777-4924

Stephanie Winiecki, Pest Controller, (801) 777-4427

William Kopfman, Utility Supervisor, (801) 777-3647

Rodney Sanders, SABER Program Manager, (formerly Asbestos Program Manager),
(801) 777-6782

Hill AFB Aircraft Maintenance Group, 309 AMXG

Brad Robb, Supervisor, (801) 777-2244

Hill AFB Bioenvironmental Engineering 75 AMDS/SGPB

Cary Fisher, Supervisor, (801) 777-1053

Utah Division of Environmental Response and Remediation

Robin Davis, Project Manager, (801) 536-4177